



12/30/96

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Our Ref: 1038-422 MIS:bh

In re patent application

Serial No. 08/433,646

Applicant: Raafat E. F. Fahim

Title: ACELLULAR PERTUSSIS VACCINES AND  
METHODS OF PREPARATION THEREOF

Filed: May 4, 1995

Group No. 1802

Examiner: R. Freed

December 27, 1996

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AMENDMENTThe Commissioner of Patents and Trademarks,  
Washington, D.C. 20231,  
U.S.A.

Dear Sir:

In response to the Office Action of July 3, 1996,  
please amend this application in the following manner:In the Claims:

Amend claims 1, 3, 5, 7, 10 and 13 as follows:

1. (Amended) A process for preparing an agglutinin preparation comprising fimbrial agglutinogens 2 (Agg 2) and fimbrial agglutinin 3 (Agg 3) substantially free from agglutinin 1 from a *Bordetella* strain, comprising the steps of:
- (a) providing a cell paste of the *Bordetella* strain;
  - (b) selectively extracting fimbrial agglutinogens 2 and 3 from the cell paste by dispersing the cell paste in a buffer comprising about 1M to about 6M urea to produce a first supernatant containing said agglutinogens 2 and 3 and a first residual precipitate;
  - (c) separating the first supernatant from the first residual precipitate;
  - (d) incubating the first supernatant at a temperature of about 75°C to about 85°C and for a time of about 10 minutes to about 60 minutes to produce a clarified supernatant containing fimbrial agglutinogens 2 and 3 and a second precipitate containing non-fimbrial agglutinin contaminants;
  - (e) concentrating the clarified supernatant to produce a

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